INTERSPIRO

99503B01

USER MANUAL

DIVATOR BCW

EC Type-examination (Directive 89/686/EEC) by SGS Yarsley ICS Ltd., Weston-super-Mare, BS22 OWA (Notified Body No 0120).

CONTENTS

1 WARRANTY INFORMATION 5
1.1 OWNER'S RESPONSIBILITIES 5
1.2 LIMITED LIFETIME GUARANTEE.....6

2. GENERAL INFORMATION AND SPECIFICATIONS..7
2.1 IMPORTANT INFORMATION 7
2.2 SCUBA CYLINDER SELECTION AND CONFIGURATION .7
2.3 SURFACE BUOYANCY OF BC'S 9
2.4 OPERATING TEMPERATURE RANGE 10
2.5 SHELF LIFE 10

3. FUNCTION.....11
3.1 THE BUOYANCY CONTROL SYSTEM 11
3.2 VEST 11
3.3 SIDE PANELS (CUMMERBUND).....12
3.4 SHOULDERS 12
3.5 BLADDER ASSEMBLY 13

4. FITTING AND ASSEMBLY.....15
4.1 ADJUSTING THE SIDE PANELS 15
4.2 PROPER FIT.....16

5. PRE-DIVE ASSEMBLY AND INSPECTION 18
5.1 OVER PRESSURE VALVE (OPV) 18
5.2 REMOTE EXHAUST VALVE (RE VALVE) 19
5.3 POWER INFLATOR/ ORAL INFLATOR MECHANISM 20
5.4 WEIGHT SYSTEM INSPECTION.....21

5.5 RE-THREADING THE RIPCORD™ SYSTEM 22
5.6 LOADING THE INTEGRATED WEIGHT SYSTEM..... 23

6. DONNING PROCEDURE..... 24

7. DIVING..... 26
7.1 PRE-DIVE CHECK..... 26
7.2 DIVING 26

8. EMERGENCY PROCEDURES 28
8.1 EMERGENCY WEIGHT RELEASE 28
8.2 PROBLEM MANAGEMENT..... 29

9. MAINTENANCE..... 31
9.1 POST DIVE BC CLEANING:..... 31
9.2 INSPECTION AND SERVICE INTERVAL 31
9.3 INSTALLATION OF NEW PARTS/ ALTERATIONS 32

10. SERVICE RECORD..... 33

1 WARRANTY INFORMATION

1.1 Owner's Responsibilities

- *Interspiro requires that the end user of this system be certified by a nationally or internationally recognized SCUBA certification agency and adequately trained in its use by a certified SCUBA instructor with thorough knowledge and experience in the use of Interspiro equipment.*
- *An annual inspection performed by an authorized Interspiro dealer is required for the safe operation of this system.*
- *Your BC (Buoyancy Compensator) is NOT a personal flotation device and should not be used as a life jacket. The BC does NOT guarantee a heads up position of the wearer at the surface.*
- *All emergency procedures should be practised periodically in shallow water (3 m or 10 feet) to maintain preparedness in the event an actual emergency should occur.*
- *For assistance with preparation, questions or service, contact your local authorized Interspiro Dealer.*

1.2 Limited Lifetime Guarantee to the Original Owner

Your BC is guaranteed against defects in materials and workmanship. This guarantee does not cover damages from accident, abuse, neglect, alterations, improper usage, normal wear & tear or failure to provide reasonable care. All warranty claims will be handled through Interspiro, or an authorized Interspiro Dealer.

Note: Buoyancy Compensator (BC) and Buoyancy Control Device (BCD) are synonymous for the same piece of SCUBA diving equipment.

BCW - Buoyancy Compensating Wing

2. GENERAL INFORMATION AND SPECIFICATIONS

2.1 Important Information

This Buoyancy Compensator's User's Manual contains important safety, maintenance, and operation information. Read this manual thoroughly before diving.

WARNING! SCUBA diving is an adventuresome activity and some risks are involved. Please be sure that you and your dive partner have current certifications and follow all of the recommendations of your certifying agency and that all equipment is used and maintained according to the manufacturer's recommendations. Failure to follow these guidelines can result in serious injury or death.

2.2 SCUBA Cylinder Selection and Configuration

Your over-all buoyancy depends on a combination of the buoyancy of all your diving equipment added to your own body's buoyancy. The Divator BCW is designed to work with a variety of tank sizes and configurations.

WARNING! Failure to comply with the following information may result in an improper buoyancy configuration. You must maintain neutral buoyancy while diving to prevent injury or death.

The maximum single and double cylinder size specifications (in liters) for the BC is found on a tank pictogram on the warning label. This label is found on the BC, inside the vest. If the double cylinder pictogram has a **"XX"** in it, then the BC has been designed for single cylinder use only. If the single and double cylinder pictograms have numbers in them, then the BC has been designed for either single or double cylinder use. The number in the pictogram indicates the largest cylinder size recommended, in liters.

Tank pictogram

Cylinder **dimensions** and **capacity** are two quantities which are important to understand when configuring your equipment. Cylinder dimensions are the actual, outside dimensions of a SCUBA cylinder (also called the tank). The BC's are designed specifically for SCUBA cylinders which have a maximum diameter of 20.3 cm (8 inch) and maximum height of 78.7 cm (31 inch).

The Divator BCW is designed for use with all Interspiro diving cylinders.

Consult your local authorized dealer if you have any questions regarding cylinder **dimensions**.

Cylinder **capacity** is the volume of the SCUBA cylinder. When expressed in cubic feet, the volume is given for compressed gas. When expressed in liters, the volume is given for the actual volume of the cylinder based on the interior dimensions of the cylinder (water capacity). Maximum recommended cylinder capacity is 19 liters. Once again, if you have a question, consult your local authorized dealer.

2.3 Surface Buoyancy of BC's

Your BC's buoyancy, has been rated by the manufacturer. Buoyancy figures were measured in fresh water at sea level, and were rounded down to the nearest pound. For buoyancies listed in the metric system, buoyancy is measured in multiples of 10 Newtons, then rounded down to the next lowest multiple.

The buoyancy of your BC is printed on a label, located on the bladder assembly. A typical label for a BC will look like the example below. This particular label indicates that the bladder assembly is rated at 19 kg (44 lbs) buoyancy.

BC label (example)

2.4 Operating Temperature Range

Air	-4° to +122° F	-20° to +50° C
Water	+28° to +104° F	-2° to +40° C

WARNING! Special Instruction in cold water diving methods, and the specific use of this product is required prior to cold water diving (temperatures below 10°C / 50°F). This instruction is beyond the scope of this User's Manual. Diving without this instruction could result in injury or death. Consult your diving instructor for this instruction prior to using this product in cold water.

2.5 Shelf Life

The shelf life for a new, unused BC when deflated and stored in a dry place at room temperature, with no exposure to ultraviolet (UV), light is seven years. Refer to storage and post dive BC cleaning information.

3. FUNCTION

3.1 The Buoyancy Control System

The function of the buoyancy control system is to add to your diving enjoyment. It is designed to provide you with a comfortable way of "wearing" your SCUBA system, a resting platform while on the surface, and an easy means of controlling your buoyancy while diving.

3.2 Vest

The vest portion of the system should fit so that it wraps partially around the front of the diver. You should be able to tighten the waist strap so that the vest fits quite snugly around the waist, in order to prevent the BC from shifting during the dive. If you can draw the two sides of the vest together and the fit is still not snug, you need a smaller size vest. If the vest is uncomfortably tight when the fully extended strap is fastened, you need at larger vest.

3.3 Side Panels (Cummerbund)

The side panels should fit around the waist (top of the hip) NOT over your rib cage or diaphragm, with at least a 10 cm (4 inch) overlap on the touch fastener (Velcro) closure. The side panels are attached using six (6) plastic screw fasteners, and can be adjusted by moving the side panels to a different set of grommets on the vest section. **It is imperative that the BC not be worn too high on the body** as this will create an undesirably high center of gravity and could restrict the ability of your diaphragm to move freely, resulting in discomfort or shortness of breath. Side panel extenders are available.

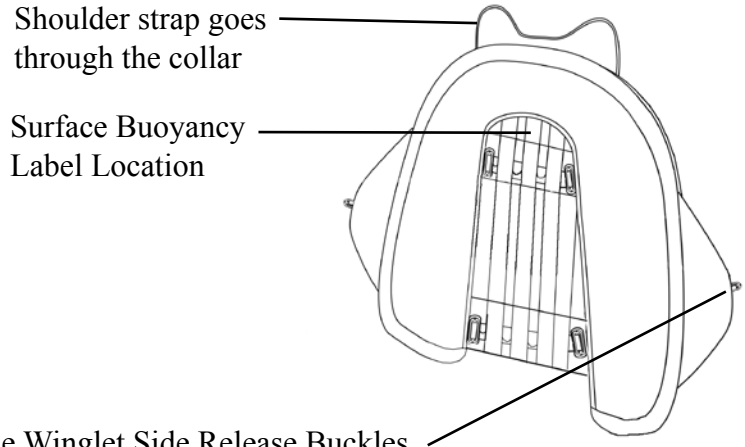
3.4 Shoulders

Length of the shoulder strap depends on personal comfort and the length of your torso. Take into consideration different suits you may be wearing with the system, and be sure to allow enough length so the pack may be worn low as described above. The sternum strap should be just above the breast line. You should easily be able to reach the quick release buckles. The sternum straps have high and low attachment loops. The BCD leaves the factory with the sternum straps attached to the higher loops. If this position puts the strap too close to the neck or the strap is covering a dry suit inflator, then the strap can be moved to the lower attachment points.

3.5 Bladder Assembly

The bladder assembly attaches to the vest section via four stainless steel slotted fasteners sewn to inner edge of the bladder assembly. The stamped metal ends of the straps are threaded through the eye of the metal tabs on the Bladder Cover (see illustration below). There are two plastic buckles on the Bladder Cover Winglets, which clip over the weight pockets to hold the buoyancy forward. Do not dive with the two forward small side release buckles detached! The shoulder straps should pass through the collar at the top of the bladder assembly.

WARNING! Do NOT dive with the two winglet side release buckles detached!

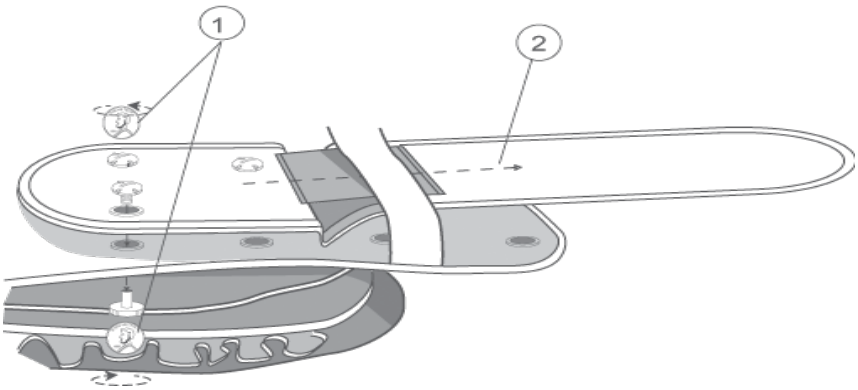

Shoulder strap goes through the collar
Surface Buoyancy Label Location
The Winglet Side Release Buckles must be attached to the vest.

WARNING! NEVER breathe from the bladder assembly. The bladder assembly was not designed as an auxiliary air source and may contain harmful contaminants, which if inhaled, may cause injury or death.

4. FITTING AND ASSEMBLY

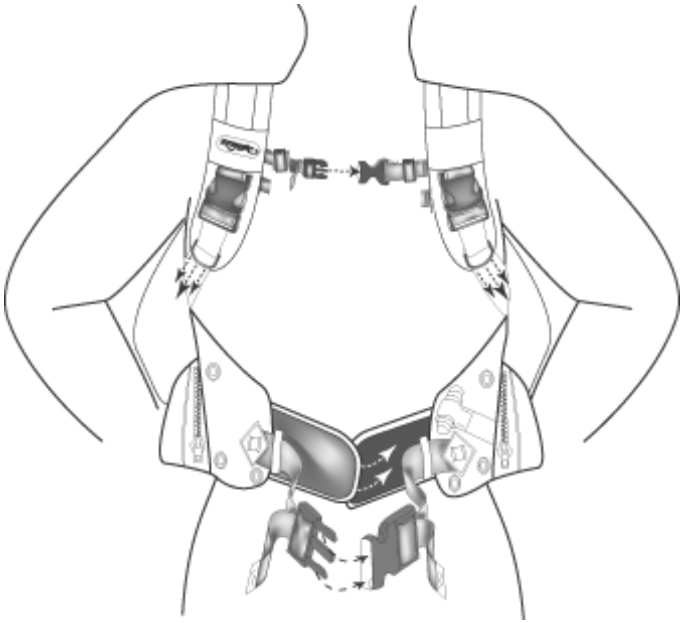
4.1 Adjusting the Side Panels

1. Using two coins, unscrew the plastic barrel-screw fasteners.
2. Move the side panel to different set of grommets on vest and reinstall.
3. Note that one extra plastic barrel-screw is installed in an unused grommet hole when the BCD leaves the factory. This extra screw can be used if one is lost.



4.2 Proper Fit

The Personal Fit System allows the diver to size each component of the buoyancy system independently, for a true custom fit. For proper performance, please be sure that your system fits as described below. Put the BC on (before attaching it to a SCUBA cylinder) and adjust the shoulders and waist as follows.



1. Loosen the shoulder straps before donning. Put it on like you would a jacket. If your system is equipped with cummerbund side panels, stretch the elastic by extending each side panel as far as possible before wrapping it around you and fastening the Velcro.
2. The system should be worn low with the bottom of the vest at the top of your hips. Once the cummerbund side panels are secure, fasten the waist strap and tighten it snugly.

3. Fasten the sternum strap. It should be just above the breast line. If you are wearing a dry suit, be sure that the sternum strap does not obstruct the drysuit inflator hose or valve. There are two sets of loops for the sternum strap. If the sternum strap is too high, the strap can be moved to the lower loops.
4. Adjust the shoulder straps.

5. PRE-DIVE ASSEMBLY AND INSPECTION

WARNING! Adjust the BC so that it does not restrict your breathing. Restriction of normal breathing while wearing your BC could result in injury or death. Before each dive, check all bands, straps, clips, and/or waist panels for proper adjustment.

5.1 Over Pressure Valve (OPV)

The over pressure / dump valve is typically located on the lower front of the bladder assembly. Some models have two OP Valves. As its name implies, the OP Valve prevents over inflation of the bladder. The valve automatically releases air when the internal bladder pressure exceeds the valve's spring pressure. The valve will automatically close when the internal bladder pressure becomes less than the valve's spring pressure. This valve may also be used to "dump" air when you are diving, by pulling the knob / string that is attached to the valve. **The OP Valve should be inspected before every dive for proper operation.**

5.2 Remote Exhaust Valve (RE Valve)

Your BC may be equipped with a remote exhaust valve. If it is, it is located on the upper left, just behind the shoulder, on the bladder assembly. The RE Valve allows you to "dump" or exhaust air manually as you adjust for neutral buoyancy. The RE Valve operates by simply pulling on the power inflator mechanism and corrugated rubber hose.

IMPORTANT! The RE Valve should be inspected before every dive for proper operation. Also, inspect that both threaded caps on the RE Valve, are tightened securely. The exhaust cap must be tightened a minimum 1/12 turn (3/8 inch) after it first contacts the body. The RE Valve was designed to be serviced. Without proper tightening of these caps, they may loosen over time and be lost.

5.3 Power Inflator/ Oral Inflator Mechanism

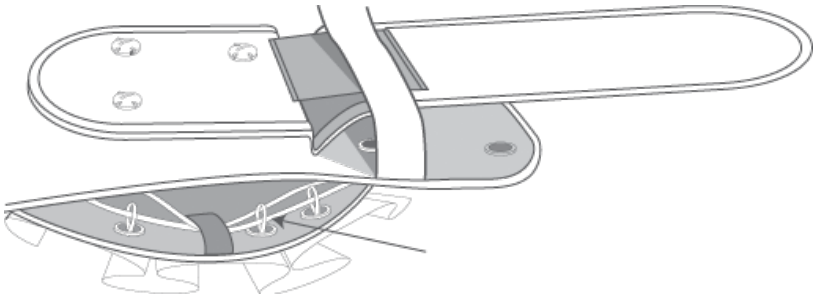
Your BC may also be equipped with a power inflator/oral inflator mechanism. This unit consists of an Oral Valve Mouthpiece, Oral Valve Button, and Pneumatic Inflation Valve (PIV) and connects directly to the RE Valve via a steel cable (inside the corrugated hose). The PIV operates over a pressure range of 6.5-13.8 bar (95-200 psi). To inflate the BC using the PIV, attach a low pressure hose to the quick disconnect (QD) fitting and depress the PIV button. To inflate the BC using the oral inflator, depress the Oral Valve Dump Button and breathe into the Oral Valve Mouthpiece.

IMPORTANT! Check all mechanisms before every dive for proper operation and leaks.

5.4 Weight System Inspection

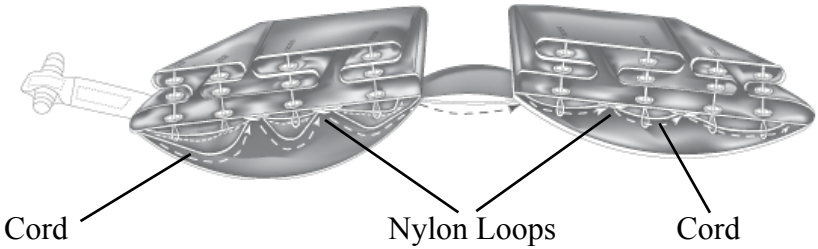
WARNING! Check to see that weight release system is secure

Ripcord ™ release system - check bottom of weight pockets to be sure they are held closed by the ripcord. If the Ripcord has been pulled, re-thread the system.



5.5 Re-threading The Ripcord™ System

If the Ripcord is not completely secure, re-thread using the following procedure.

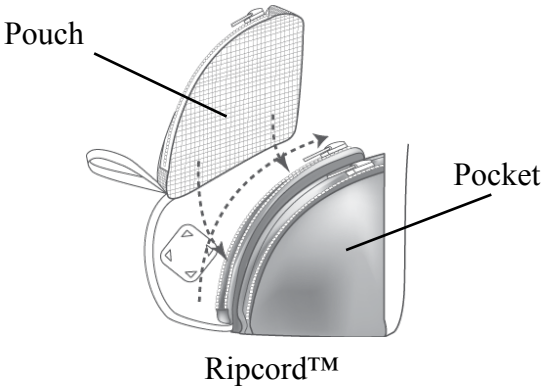


- Return the Ripcord handle to the secure position.
- Pull the cord through for the right side weight pocket.
- Start with the loop closest to the Ripcord handle.
- Each white nylon loop is threaded through three grommets. The cord is then threaded through the end of the white loop.
- Thread the cord under the webbing that is between the grommets.
- Repeat for all nylon loops.
- Finish by pushing the cord between the pocket and the vest.
- Repeat on the opposite pocket.

5.6 Loading the Integrated Weight System

Weights can be loaded after the system is donned as shown, or the weights can be loaded before the system is donned. Considerations include the amount of weight and the distance to enter the water. Ask your buddy for help in either case. To load the weight system:

- Unfasten the buckles securing the bladder assembly winglets to the side of the vest to allow easy access to the weight pockets.
- Load the Ripcord™ pouches through the zippered opening on the pocket top. Be sure the zipper is fully closed after loading.
- Refasten the buckles securing the bladder winglets to the side of the vest. (Important! This is required for proper BC performance)



6. DONNING PROCEDURE

WARNING! Diving equipment is heavy! To avoid injury or fatigue and to become familiar with each other's equipment, have your buddy assist you! Take this opportunity to be sure your buddy understands how your weight release works.

Be sure you have read and performed the "Proper Fit" page in the Fitting and Assembly section of this manual first.

- Attach the BC to the Cylinder Package with the Quick attachment interface.
- Align the rail with key-holes push towards the top of the cylinder package until it snaps
- Assure that the BC is properly attached to the cylinder Package
- Connect the regulator to the cylinder valve and finish assembling the system according to instructions in the DIVATOR User Manual.
- Be sure you are familiar with the low pressure inflator system on your BC. Inflate the system and check for leakage.
- Loosen the shoulder straps.
- Remember, the system should be worn low with the bottom of the vest at the top of your hips
- Fasten the side panels and/or the waist band. Extend the cummerbund side panels as far as possible before wrapping them around your body. Be sure to get the waist tight.
- Fasten the sternum strap and adjust it. If you are wearing a drysuit, be sure that the sternum strap does not obstruct the drysuit inflator hose or valve.

- Adjust the shoulder straps.
- Fasten the split saddle strap if your system is so equipped.

7. DIVING

7.1 Pre-Dive Check

Prior to each dive, always check to make certain your BC has no obvious leaks, by inflating the bladder until the over pressure relief valve vents. Listen for air leaks. If any are found, then service is necessary by an authorized technician. Check the Ripcord™ weight system.

7.2 Diving

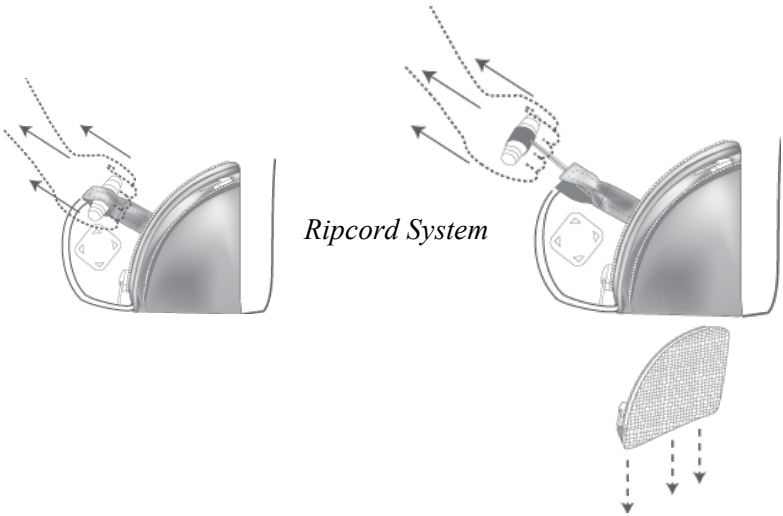
- Your final buoyancy is primarily affected by your body, your thermal suit, your diving cylinder, and your lead weights. It is **adjusted** with your BCD. Both too little and too much lead ballast can be dangerous. To determine the proper amount of lead ballast weight needed for your system, go (with another diver) to a shallow safe location with the type (fresh or salt) of water you will be diving in later. During the test, wear a **near empty** cylinder of the same size and material you will be using. With a safety diver present, carefully add or remove weights from your system until you .oat vertically at the surface at eye level with a full breath of air (and a near empty cylinder). The near empty cylinder is important. Many divers weight themselves for a full cylinder, and then have trouble staying down later in the dive as the cylinder gains buoyancy.

- Start your descent by releasing air slowly either through the power inflator by holding the exhaust over your head and pushing on the exhaust button or by pulling gently (approximately 1/2 inch) on the inflator to open the remote exhaust valve on the shoulder if your system is so equipped. ***Do not use excessive force as this could seriously damage the system***. Let out just enough air to start your descent. As you descend and when you reach your desired depth you will need to add air to your BC by pressing on the air inlet button of your low pressure inflator to attain "neutral" buoyancy.
- It may be necessary to adjust the waist during the dive due to the compression and expansion of your diving suit.
- You will need to add air to the BC as you descend and exhaust air from the BC as you ascend, to maintain neutral buoyancy throughout your dive.
- When you begin your ascent at the termination of your dive, **you must release air** from your BC either through the exhaust on the inflator or through the remote exhaust. Be sure you are vertical with your left side slightly higher than your right side to vent the BC. You should release air so as to maintain rate of ascent of one foot per second or less. To maintain a safe ascent rate, you must swim to the surface. Do not use your BCD to pull you to the surface, as this may result in fast ascents. **Control your Ascent Rate!**
- Inflate your BC when you reach the surface to attain a **comfortable** degree of buoyancy and lay back against the tank. Do not Overinflate the BCD.

8. EMERGENCY PROCEDURES

8.1 Emergency Weight Release

WARNING! If you are diving with a buoyant wet or drysuit, be aware that releasing weights at depth should only be done if absolutely necessary (for example, if your drysuit has flooded, making you extremely negative). Without weights, it may be very difficult to control your ascent rate as you near the surface. Weight release at depth should only be done according to the standards set by your certification agency.



Ripcord System

8.2 Problem Management

Inflator problem

Inflators may fail due to foreign material in the mechanism, damage from impact by tanks or weights, or other causes. Practice the procedures below (in a safe location with your buddy) for your safety.

Inflator fails to operate

Check to see that the low pressure hose is properly connected. Orally inflate the bladder if necessary to establish proper buoyancy.

Inflator valve sticks open

Should the inflator valve stick open, causing an uncontrolled filling of the bladder and/or excessive leakage of air at the inflator, hold exhaust valve open and over your head to vent excess air as you disconnect the low pressure hose from the inflator. Abort the dive.

Exhaust valve or over pressure valve sticks open

If the exhaust valve on the inflator sticks open, hold the inflator in the lowest position possible, to allow the bladder to hold air from that level up. Abort the dive and attempt to swim slowly, 0.3 m per 2 seconds (1 ft per 2 sec), or less, to the surface. Should excessive negative buoyancy be created, your weights may need to be released. Weight release at depth should only be done according to the standards set by your certification agency.

Failure to hold air

If for any reason the system should fail to hold an adequate amount of air to provide necessary buoyancy, abort the dive and attempt to swim slowly, 0.3 meter per 2 seconds (1 ft per 2 seconds) or less, to the surface. Should excessive negative buoyancy be created, your weights may need to be released. Weight release at depth should only be done according to the standards set by your certification

agency.

The above is based on recreational no decompression diving. Decompression divers must have complete redundant systems to handle all problems underwater.

IMPORTANT! If at any time abnormal performance or malfunction is experienced, the system must be serviced by an authorized dealer prior to any further use.

9. MAINTENANCE

The reliability and correct functioning of your equipment depends on the care it receives.

9.1 Post Dive BC Cleaning:

- Rinse the BCD thoroughly with fresh water after each use.
- Rinse the inside of the bladder by holding the exhaust button on the inflator system open and allowing fresh water to partially fill the bladder. "Slosh" the water around to dissolve any salt crystals (salt crystals can damage the bladder over time). Drain the bladder completely and repeat.
- Hang the BCD upside down and allow it to dry while partially inflated. Drain any residual water through the exhaust hose while the BCD is hanging upside down.
- Store the BCD partially inflated in a cool dry place.

9.2 Inspection and Service Interval

Your BCD (including the Inflator) should be inspected and maintained by an authorized dealer at least once a year, and more often if you dive frequently. This is a required action to keep your warranty in effect. There is a Service Record in the back of this manual for the Dealer to record the service performed.

9.3 Installation of New Parts/ Alterations

WARNING! Use of non-factory parts or accessories, or any change to the product not specifically authorized by Interspiro, or performed by an unauthorized repair facility, may cause improper operation, damage, or leakage of the BC resulting in a loss of buoyancy control or air holding capability. This could result in injury or death, plus will void your warranty. Replace worn or damaged items with approved, factory supplied or specified parts ONLY.

10. SERVICE RECORD

DATE	SERVICE PERFORMED	SERVICE CENTER	TECHNICIAN
	Owner Orientation: Dealer Preparation:		

Locating Service and Support

The Dealer that sold you your Buoyancy Compensator will be able to assist you with additional questions regarding product operation, warranty, and service.

INTERSPIRO

www.interspiro.com

CENTRAL EUROPE

AUSTRIA
INTERSPIRO GesmbH **www.interspiro.de**
Sternweg 20 A-8401 ZETTLING **AUSTRIA**
TEL +43 (0)313 557 333 **FAX** +43 (0)313 557 333 22 **E-MAIL** info@interspiro.de

GERMANY
INTERSPIRO GmbH **www.interspiro.de**
Postfach 1220 D-76691 FORST/BADEN **GERMANY**
TEL +49 (0)7251 8030 **FAX** +49 (0)7251 2298 **E-MAIL** info@interspiro.de

SWITZERLAND
INTERSPIRO AG **www.interspiro.de**
Güterstraße 47 CH-4133 PRATTELN **SWITZERLAND**
TEL +41 61 827 99 77 **FAX** +41 61 827 99 70 **E-MAIL** info@interspiro.ch

THE NETHERLANDS & BELGIUM
INTERSPIRO BV **www.interspiro.nl**
Televisieweg 113 NL-1322 BD ALMERE **NETHERLANDS**
TEL +31 (0)36 5363103 **FAX** +31 (0)36 5384809 **E-MAIL** infobv@interspiro.com

NORTH & SOUTH AMERICA

INTERSPIRO Inc. **www.interspiro-us.com**
10225 82nd Avenue PLEASANT PRAIRIE WI 53158-5801 **USA**
TEL +1 262 947 9901 **FAX** +1 262 947 9902 **E-MAIL** sales@interspiro-us.com

UNITED KINGDOM & IRELAND

INTERSPIRO Ltd. **www.interspiro.com**
7 Hawksworth Road Central Park TELFORD Shropshire TF2 9TU **UNITED KINGDOM**
TEL +44 (0)1952 200 190 **FAX** +44 (0)1952 299 805 **E-MAIL** infouk@interspiro.com

SCANDINAVIA, ASIA/PACIFIC & MIDDLE EAST

SWEDEN
NORDIC & EXPORT SALES DIVISION **www.interspiro.com**
Box 10060 S-181 10 LIDINGÖ **SWEDEN**
TEL +46 8 636 51 00 **FAX** +46 8 765 48 53 **E-MAIL** info@interspiro.com

MALAYSIA
NORDIC & EXPORT SALES DIVISION **www.interspiro.com**
305 & 305A Lorong Perak Taman Melawati 53100 KUALA LUMPUR **MALAYSIA**
TEL +60 3 4105 8122 **FAX** +60 3 4105 3122 **E-MAIL** asiapacific@interspiro.com

PART NO. 99503B01